

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A method of protecting a local area of a gas turbine component from the effect of a ~~thermomechanical~~ thermochemical or mechanical processes carried out on a surface of the component, the method comprising the steps of:

applying a masking material to a local area or to local areas on the gas turbine component in two or more layers, said such that the uppermost layer or uppermost layers of the masking material containing the highest volume fraction of at least one filler material and ~~a substance which fluoresces under ultraviolet light;~~

at least partially thickening at least one of the layers of the masking material before applying the next layer of the masking material ~~having the at least one filler material and the substance which fluoresces under ultraviolet light;~~

carrying out the thermochemical process or a mechanical process~~[[:]], and~~ removing a portion of the masking material from the local area or the local areas by heating the masking material and removing the filler material from the local area or the local areas by a separate step, and

~~carrying out an inspection using ultraviolet light to locate any unwanted residual masking material on the surface of the component and removing the unwanted residual masking material from the surface by mechanical means,~~

~~wherein the filler material particle diameter size is on average, or contains mixtures with average diameters, ranging from 10 μ m to 150 μ m.~~

2. (Previously Presented) The method according to claim 1, wherein the local area to be protected is a braze joint, a cooling hole, or a local part of a coated area.

3. (Canceled)

4. (Previously Presented) The method according to claim 1, wherein the masking material is applied from an external surface or from an internal cavity of the component.

5. (Previously Presented) The method according to claim 1, wherein the masking material is thickened by the use of an energy source, whereby energy impinges from the outside or from an internal cavity of the component.

6. (Previously Presented) The method according to claim 1, wherein after applying the masking material the surface of the component is cleaned by mechanical means to remove any unwanted residual masking material.

7-8. (Canceled)

9. (Currently Amended) The method according to claim 1, wherein the masking material contains a substance that fluoresces under ultraviolet light, and after removing unwanted residual ~~the~~ masking material, a re-inspection ~~an inspection~~ is carried out using ultraviolet light to locate ~~any further~~ unwanted residual masking material and the unwanted residual masking material is mechanically removed from the surface.

10. (Previously Presented) The method according to claim 1, wherein after removing unwanted residual masking material, masking material is reapplied to the local area.

11. (Previously Presented) The method according to claim 1, wherein the thermochemical or mechanical process is one or a combination of a chemical etching method, acid or alkaline stripping, water jet stripping, grit blasting, high speed grit blasting or another abrasive technique.

12. (Previously Presented) The method according to claim 1, wherein the component is heated before or during the method to facilitate the application and/or thickening of at least a portion of the masking material.

13. (Canceled)

14. (Currently Amended) The method of claim ~~43~~ 1, wherein the amount of filler is changed from layer to layer of masking material.

15. (Currently Amended) The method of claim 14, wherein the masking material of the last uppermost layer or uppermost layers contains 30 – 80 vol.-% filler material with a grain size of 40 – 150 μm to a depth not less than 1 mm.

16. (Previously Presented) The method according to claim 1, wherein the fillers added to the masking material include particles or fibres of metal, oxide material or organic materials.

17. (Currently Amended) The method of claim 16, wherein the filler material content of the uppermost layer or uppermost layers of the masking material is in the range of 10 – 90 vol.-%.

18. (Currently Amended) The method of claim 17, wherein the filler material content of the uppermost layer or uppermost layers of the masking material is in the range of 20 – 60 vol.-%.

19. (Currently Amended) The method according to claim 1, wherein the filler material particle diameter size is on average, or contains mixtures with average diameters, ranging from 1 μm to 500 μm .

20. (Canceled)

21. (Currently Amended) The method according to claim 1, wherein the filler material particle diameter size is on average, or contains mixtures with average diameters, ranging from 40 μm to 100 μm .

22. (Currently Amended) The method according to claim 1, wherein the ~~removal of the~~ thickened masking material is removed from the local area ~~is done~~ by burning it the masking material out and a final removal of ~~any~~ residual masking material from the local areas is completed by water jet machining or by an ultrasonic cleaning treatment.

23. (Previously Presented) The method according to claim 22, wherein the local area is a cooling hole and the step of the removal of masking material in cooling holes is done by locating the cooling holes using a vision system which directs a computer numerically controlled machine.

24. (Previously Presented) The method according to claim 1, wherein the masking material is a photopolymerizing resin or a mixture of resins and photoinitiator which polymerize with exposure to ultraviolet light.

25. (Previously Presented) The method according to claim 1, wherein the masking material is a UV polymerizing plastic.

26. (Currently Amended) The method according to of claim 25, wherein thickened masking material containing the filler material is heated or processed so

as to volatilize or otherwise remove ~~the~~ a volatile, not polymerized organic portion of the masking material before the thermochemical or mechanical process on the surface of the component is carried out.

27. (Currently Amended) The method according to claim ~~25~~ 26, wherein the masking material includes binding agents which are effective in holding together ~~the~~ solid particles or fibres of the filler material after the organic portion of the masking material is removed.

28. (Previously Presented) The method according to claim 1, wherein the masking material is thickened by an electromagnetic energy source or a collimated light energy source.

29. (Previously Presented) The method according to claim 28, wherein the electromagnetic energy source is visible, ultraviolet or infra-red light.

30. (Previously Presented) The method according to claim 28, wherein the collimated light energy source is a laser.

31. (Previously Presented) The method according to claim 1, wherein the local area to be protected is an area of a gas turbine component which is sensitive to the thermochemical and/or mechanical process.

32. (Previously Presented) The method according to claim 16, wherein oxide material includes silica, magnesia, calcia, alumina, zirconia, yttria or a mixture thereof.

33. (Previously Presented) The method according to claim 25, wherein the UV polymerizing plastic is a polyurethane, a polyurethane oligomer mixture, 2-Hydroxyl Methacrylate, Isobornyl Acrylate, Maleic acid, methyl methacrylate, butyl acrylate copolymer, acrylic acid, T-Butyl Perbenzoate, poly(isobutyl methacrylate), poly(vinyl toluene), polypropylene or a polypropylene / polyurethane oligomer mixture, the class of polymers vetones or silicones, or any mixture thereof.

34. (New) The method according to claim 1, wherein at least a lowermost layer of the masking material is free of the filler material.

35. (New) A method of protecting a local area of a gas turbine component from the effect of a thermochemical or mechanical processes carried out on a surface of the component, the method comprising the steps of:

applying a masking material to a local area or to local areas on the gas turbine component in two or more layers, such that the uppermost layer or uppermost layers of the masking material containing the highest volume fraction of at least one filler material;

at least partially thickening at least one of the layers of the masking material before applying the next layer of the masking material;

carrying out the thermochemical process or a mechanical process, and

removing a portion of the masking material from the local area or the local areas by burning the masking material and removing the filler material from the local area or the local areas by a separate step.

36. (New) The method according to claim 35, wherein at least a lowermost layer of the masking material is free of the filler material.

37. (New) A method of protecting a local area of a gas turbine component from the effect of a thermochemical or mechanical processes carried out on a surface of the component, the method comprising the steps of:

applying a masking material to a local area or to local areas on the gas turbine component in two or more layers, such that the uppermost layer or uppermost layers of the masking material containing the highest volume fraction of at least one filler material;

at least partially thickening at least one of the layers of the masking material before applying the next layer of the masking material;

carrying out the thermochemical process or a mechanical process, and

removing a portion of the masking material from the local area or the local areas by heating the masking material to volatilize the portion of the masking material and removing the filler material from the local area or the local areas by a separate step.

38. (New) The method according to claim 37, wherein at least a lowermost layer of the masking material is free of the filler material.